REMARKS

The Examiner has rejected claims 1, 7, 19-25 under 35 U.S.C. 103(a) as being unpatentable over Steer U. S. Patent No. 6,643,517.

The Examiner states regarding claims 1, 7, 19-25, Steer discloses essentially all the claimed invention as set forth in the instant application, further Steer discloses a method of using location information for interference protection. In addition, according to the Examiner, Steer discloses a method for operating a mobile satellite communication system (which reads on GPS) having at least one gateway (7), at least one user terminal (10, 11), comprising steps of: for a site to be protected from UT transmissions, specifying an exclusion zone (which reads on col. 3, lines 19-24) associated therewith; and selectively providing service to a UT (10, 11) depending on a determined location of the UT relative to the exclusion zone (which reads on col. 3, lines 48-60) and on an estimate of the determined UT location (which reads on col. 3, lines 50-55). However, according to the Examiner, Steer fails to specifically disclose (a) the use of a constellation of satellites and (b) a confidence limit (CL) and the estimated error (E).

The Examiner contends, however, that (a) the use of a constellation of satellites is well known in the art and at the time of the invention it would have been obvious to a person of ordinary skill in the art to improve Steer by modifying the system and method for invoking barring features in a satellite network with a constellation of satellites for the purpose of operating a satellite communication system.

The Examiner contends that in the same field of endeavor, Martti et al discloses a method for determining a confidence limit. In addition, according to the Examiner, Martti et al discloses the use of (b) confidence limit and estimated error (which reads on col. 1, lines 60-67 and col. 2, lines 1-45).

Therefore, the Examiner concludes, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to improve Alperovich et al (?) by modifying the position location system with a confidence limit and estimated error taught by Martti et al for the purpose of setting the target value.

Applicants respectfully submit that in Steer there is disclosed "A problem with mobile radio systems is the potentially harmful interference they may cause to other electronic equipment. Such interference can be dangerous and even life-threatening in hospitals and aircraft. The present invention provides a method to protect against improper operation of mobile radios, e.g. cellular phones, by making use of a 'location technique' and knowledge of the mobile's location to determine if the mobile is inside a protected region and thus needs to constrain its operation. Two modes of operation are possible: one utilising a location technique that is part of the mobile radio system, and the second utilising a location service that is independent of the mobile radio system (such as the satellite

"based GPS system). The present invention includes control of operation, such as no audible ringing, or outgoing calls only, as well as possible control of transmitter power to protect against interference. This allows for the safe operation of mobile radios in regions where interference could cause serious problems and also provides a method for maintaining social etiquette. Protected region boundaries and conditions of restricted operation are broadcast by base stations on the broadcast control channels. If the location of a mobile is determined to be within a protected region defined by the broadcast message, its operation is limited to the conditions specified."

Applicants respectfully submit that at col. 3, lines 48-60 of Steer there is taught "(d) The mobile radio makes use of a suitable 'location finding' technique to determine its location. (e) The mobile radio compares its measured location to the protected region boundaries to determine whether or not it is inside a protected region and thus, needs to constrain its operation. (f) If the mobile radio is within a protected region, it constrains its operation according to the conditions broadcast for that protected region (e.g. low power operation or no audible ringing). (g) If the mobile radio is not within a protected region, then it operates in the normal (unconstrained) manner."

At col. 3, lines 19-24 of Steer, Applicants respectfully submit there is taught that it is impossible to prevent people from operating mobile radio equipment in sensitive areas so that the invention provides an arrangement whereby they can be operated safely in these areas. However, at col. 3, lines 13 et seq it is clearly indicated that Steer is directed to safety issues, wherein it is stated "This is, perhaps, not quite as life threatening as previous examples, but nonetheless is a serious public nuisance."

Thus, Applicants respectfully submit that Steer is primarily concerned with safety and protection from danger in connection with the operation of cellular phones, especially as recited at col. 1, lines 20 et seq wherein it is stated "There are two places where this problem is particularly dangerous, and perhaps life-threatening. These are in hospitals and in aircraft." Further, as previously recited at col. 3, the recitation again sustains this position by stating that many restaurants and concert halls prohibit carrying mobile phones to avoid annoyance to patrons and that this is perhaps not quite as life-threatening as previous examples but nonetheless is a serious public nuisance.

It is for these reasons Applicants respectfully contend that Steer is specifically directed to safety issues, excluding land-based cellular mobile phones, whereas Applicants' invention is directed to a mobile satellite communication system allowing access to said system by specifying exclusion zones as set out in claim 1. Furthermore, Steer neither teaches, suggests or implies a gateway and a user terminal as set out in claim 1 nor, as the Examiner admits, discloses the use of a constellation of satellites and a confidence limit (CL) and the estimated error (E) as required by claim 1.

Applicants respectfully contend that Martti et al discloses a confidence limit for a telecommunication network element which is completely non-analogous to the system of the instant invention and neither suggests, teaches or implies its use in connection with a communication satellite system comprising the UT and gateway of the instant invention associated with providing access to same and employing the exclusion zone on an estimated error (E) of the determined UT location as required in claim 1.

Applicants respectfully submit that Alperovich et al is found to teach "A telecommunications system and method is disclosed for invoking barring features within a satellite network when calls to a subscriber within the satellite network are optimized. When a call is optimized for the satellite subscriber, the actual geographic location of the satellite subscriber is sent to the HLR and the new (optimal) MSC/VLR. This location can be sent as an MSC address, or other form. Therefore, when a barring feature is associated with the call, this MSC address is checked by the serving MSC or the HLR (in the case of barring of incoming calls when roaming outside of the home Public Land Mobile Network country). If the satellite subscriber's actual geographic location is within the barred area, the barring feature is invoked. Otherwise, the barring feature is not invoked."

Applicants respectfully submit that in Alperovich et al at col. 2, line 66 to col. 3, line 12 there is indicated "The present invention is directed to telecommunications systems and methods for invoking barring features within a satellite network when calls to or from a subscriber within the satellite network are optimized...If the satellite subscriber's actual geographic location is within the area prescribed to the barring feature, the barring feature is invoked. Otherwise, the barring feature is not invoked."

It is Applicants' position that Alperovich et al, directed to a system and method for invoking barring features in a satellite network as recited, may not be properly combined with Martti et al, directed to method for determining a confidence limit in a land-based telecommunications network, to properly reject Applicants' claims. Furthermore, Steer, directed to a method of using location information for interference protection relating to safety issues for land-based cellular phones, may not be properly combined with Martti et al, directed to establishing confidence limits in large telecommunications network, there being no suggestion to combine same in either reference nor any motivation to one of ordinary skill in the art to so combine.

Applicants respectfully conclude that, likewise, the combination of Steer, directed to land-based safety systems, may not be properly combined with either of Alperovich et al, directed to a system and method for invoking barring features in a satellite network, or Martti et al, directed to defining a method for determining a confidence limit in a land-based telecommunications system, there being no suggestion amongst any of the references to

so combine or any motivation to one of ordinary skill in the art to so combine other than Applicants' own specification and claims.

The Examiner has rejected claims 2-6, 8-12 under 35 U.S.C. 103(a) as being unpatentable over Steer in view of Maeda et al U. S. Patent No. 6,352,222.

The Examiner states regarding claims 2, 6, 8, 9, Steer discloses everything claimed as applied above (see claim 1), however, Steer fails to specifically disclose the use of the exclusion zone is specified to comprise at least one of a polygon that defines an area, a volume, or a surface.

The Examiner states that in the same field of endeavor, Maeda et al discloses a satellite, satellite control method and satellite communication system. In addition, according to the Examiner, Maeda et al discloses the use of an exclusion zone is specified to comprise at least one of a polygon that defines an area, a volume, or a surface (which reads on this as to form such a polygon that includes all the service areas, as disclosed in col. 10, lines 37-39).

Therefore, the Examiner concludes, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to improve Steer by modifying the position location system with the exclusion zone is specified to comprise at least one of a polygon that defines an area, a volume, or a surface as taught by Maeda et al for the purpose of setting the initial value for the orbital inclination angle.

Applicants respectfully contend that Maeda et al is directed to "In order to establish the communication lines among the movable bodies and/or fixed stations and to configure communication system with a small number of satellites, present method has the steps of determining six orbit-related parameters by using a input conditions including a geographical condition of the service area, a desired service time and the tolerance of an ascending vertical angle within which the satellite can be viewed from the service area, and establishing the satellite communication with one or more satellites, an individual satellite being arranged on the orbits selected and combined among plural elliptical orbits corresponding to the determined six orbit-related parameters on which the satellites stay for a sufficiently long time that they may come successfully into sight in the zenith direction."

Applicants respectfully submit that in Maeda et la at col. 10, lines 37-39 there is taught that additional locations may be defined so as to form such a polygon that includes all the service areas. "This polygon can be formed by plural adjoining triangles."

Applicants respectfully submit that Maeda et al is directed to an artificial satellite traveling along an elliptical orbit. The elliptical orbit is defined by six orbit-related parameters obtained with input conditions including the geographical conditions of the service area to be covered by the artificial satellite. The tolerance of the ascending vertical angle within which the artificial satellite can be viewed from the service area and the

reference time defining the orbit elements. Maeda et al is not seen to be concerned with the mobile satellite communication system of the instant invention, nor does it speak to accessing said satellite system by specifying exclusion zones, nor does it teach, suggest or imply selectively providing service to a UT depending on a determined location of the UT relative to the exclusion zone and on an estimated error (E) of the determined UT location. As previously stated, Applicants respectfully contend that Maeda et al does nothing more than define service areas and speak to four locations over Japan where service areas are not included in a quadrangle having those locations at its corners, additional locations with their own latitude, longitude and elevation are defined so as to form "such a polygon that includes all the service areas. This polygon can be formed by plural adjoining triangles."

Applicants respectfully submit that this teaching may not be properly combined with Steer, directed to a land-based cellular telephone system, nor cure the deficiencies of Steer, relating to exclusion zones comprising at least one polygon that defines an area, a volume or surface as in claim 2; a polygon that defines an area, a volume or a surface and further considers at least one of RF obstructions and terrain features as in claim 6; an exclusion zone specified to comprise a polygon defined by connected points on the surface of the earth as in claim 8; and, finally, an exclusion zone specified to comprise a volume defined by connected points on the surface of the earth and at least one point located above the surface of the earth as in claim 9.

Therefore, Applicants respectfully disagree that it would have been obvious to one of ordinary skill in the art at the time the invention was made to improve Steer by modifying the position location system with the exclusion zone is specified to comprise at least one of a polygon that defines an area, a volume or a surface as taught by Maeda et al for the purpose of setting the initial value for the orbital inclination angle.

The Examiner states regarding claims 3-5, Steer discloses everything claimed as applied above (see claim 1), in addition Steer discloses a location of the UT (10) is determined by the UT (10), and transmitted to the GW (7) as disclosed in col. 4, lines 45-67.

Applicants respectfully submit that at col. 4, lines 45-67 of Steer there is a description of the preferred embodiment, "Referring to Fig. 1, a portion of a radio communications system is shown comprising a plurality of base stations and mobile radios...A mobile radio 10 is shown located within a protected (controlled) region 12 and another mobile radio 11 is shown outside the protected region 12."

Applicants respectfully submit that claims 3-5 have been shown to be patentable over Steer for the reasons recited above with regard to claim 1 which are hereby respectfully incorporated by reference. Furthermore, Applicants respectfully submit that Steer no where at the recited passages relied upon by the Examiner discloses a method as

in claim 1 wherein location of the UT is determined by the UT and transmitted to the GW. Applicants respectfully submit that Steer is devoid of any teaching, suggestion or implication of a GW as employed in the instant claims. Likewise, Applicants respectfully submit that Steer is deficient in teaching the method as set out in claim 1 wherein the location of the UT is determined by the UT in cooperation with the GW; and the method of claim 1 wherein the location of the UT is determined by the GW for the reasons recited above with respect to claims 1 and 3.

The Examiner states regarding claim 10, Steer discloses everything claimed as applied above (see claim 1), in addition Steer discloses the exclusion zone is specified to comprise a surface defined by at least two connected points on the surface of the earth and at least point located above the surface of the earth as disclosed in col. 5, lines 4-15.

Applicants respectfully submit that at col. 5, lines 4-15 of Steer there is merely indicated that "Although only one protected region 12 is shown, it should be obvious that in any mobile communications network, there may be more than one such protected region. The boundaries may be described by means of the standard latitude and longitude measures of the boundaries of the region inside which mobile radio operations are to be restricted..." Applicants respectfully contend that this recitation as relied upon by the Examiner does not teach, suggest or imply that the exclusion zone is specified to comprise a surface defined by at least two connected points on the surface of the earth and at least one point located above the surface of the earth as required by claim 10. Furthermore, claim 10 has been seen to be patentably distinguishable over Steer for reasons recited above with regard to claim 1 which are hereby respectfully incorporated by reference.

The Examiner states regarding claims 11-12, Steer discloses everything claimed as applied above (see claim 1), in addition Steer discloses boundaries of the exclusion zone are static as disclosed in col. 5, lines 4-15.

Applicants respectfully submit that at col. 5, lines 4-15 of Steer there is disclosed "it should be obvious that in any mobile communications network, there may be more than one such protected region. The boundaries may be described by means of the standard latitude and longitude measures of the boundaries of the region inside which mobile radio operations are to be restricted." Applicants respectfully submit that although they do not necessarily agree that the recited passages in col. 5 of Steer, relied upon by the Examiner, teach static boundaries, nevertheless, claim 11 has been seen to be patentably distinguishable over Steer for reasons recited above with regard to claim 1 which are hereby respectfully incorporated by reference.

Applicants further respectfully contend that with regard to claim 12, the mere teaching in the recited reference relied upon by the Examiner that there may be more than one protected area does not teach an exclusion zone having dynamic exclusion areas and

capable of at least one movement or change in shape as required by claim 12. Furthermore, claim 12 has been seen to be patentably distinguishable over Steer for reasons recited above with regard to claim 1 which are hereby respectfully incorporated by reference.

The Examiner has rejected claims 13-18 under 35 U.S.C. 103(a) as being unpatentable over Steer in view of Maeda et al and further in view of Ishikawa et al U. S. Patent No. 6,332,069.

The Examiner states regarding claims 13-18, Steer in view of Maeda et al discloses everything claimed as applied above (see claim 1) however, Steer in view of Maeda et al fails to specifically disclose the use of the value of E is a function of the accuracy of the UT local oscillator, and where information that specifies the accuracy of the UT local oscillator is stored in the UT.

The Examiner contends that in the same field of endeavor, Ishikawa et al discloses a method for determining position of mobile earth station in satellite communication system. The Examiner further contends that, in addition, Ishikawa et al discloses the use of the value of E is a function of the accuracy of the UT local oscillator, and where information that specifies the accuracy of the UT local oscillator is stored in the GW (which reads on t is possible to perform high accuracy position determination by estimating and compensating for the timing error arising from instability in the accuracy of the clock of the mobile earth station and the frequency error resulting from instability of the frequency oscillator of the mobile earth station, as disclosed in col. 6, lines 10-20.

The Examiner concludes, therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to improve Steer in view of Maeda et al with the use of the value of E is a function of the accuracy of the UT local oscillator, and where information that specifies the accuracy of the UT local oscillator is stored in the UT as taught by Ishikawa et al for the purpose of determine the estimated position of the mobile earth station relative to its true position.

Applicants respectfully submit that at col. 6, lines 10-20 in Ishikawa et al there is disclosed "According to another aspect of the present invention, by using the information about measured distances and Doppler shift amounts between the mobile earth station and the non-geostationary satellite, which are measured at different local times, errors in time which are attributable to instability in the position of the mobile earth station and in the accuracy of the clock mounted in the mobile earth station and errors in frequency which result from instability of the frequency oscillator mounted in each mobile earth station can be estimated at the same time. By removing the factors responsible for these errors, it is possible to achieve high accuracy position determination of the mobile earth station."

Applicants respectfully contend that no where in the recited passage at col. 6 of Ishikawa et al is there taught, suggested or implied employing the method of claim 1 wherein the value of E is a function of the accuracy of the UT local oscillator and where information that specifies the accuracy of the UT local oscillator is stored in the UT as in claim 13; the value of E is a function of the accuracy of the UT local oscillator and where information that specifies the accuracy of the UT local oscillator is stored in the GW as in claim 14; the value of E is a function of the accuracy of the UT local oscillator and where information that specifies the accuracy of the UT local oscillator is stored in a home GW of the UT and is transferred from the home GW to a serving GW when the UT is roaming as in claim 15; the value of E is a function of the accuracy of the UT local oscillator and where information that specifies the accuracy of the UT local oscillator is stored in or is determined by the UT and is transferred to the GW as in claim 16; the value of E is less than CL and where the GW sets the value of CL to be less than a possible minimum value of E for excluding all UTs from operating within the exclusion zone as in claim 17; and, finally, where the value of E is less than CL and where the GW sets the value of CL to be greater than a possible maximum value of E for enabling all UTs to operate within the exclusion zone as in claim 18.

Applicants respectfully submit that the recited passage relied upon by the Examiner is devoid of any such evaluation or specification of the value of E as recited in claims 13-18 and merely states "...errors in time which are attributable to instability in the position of the mobile earth station and in the accuracy of the clock mounted in the mobile earth station and errors in frequency which result from instability of the frequency oscillator mounted in each mobile earth station can be estimated at the same time." Applicants are at a loss to discern wherein the recited passage relied upon by the Examiner there is taught, suggested or implied the value of E as set out in claims 13-18.

Applicants therefore respectfully disagree that it would have been obvious to a person of ordinary skill in the art at the time the invention was made to improve Steer in view of Maeda et al with the use of the value of E is a function of the accuracy of the UT local oscillator and where information that specifies the accuracy of the UT local oscillator is stored in the UT as taught by Ishikawa et al for the purpose of determine the estimated position of the mobile earth station relative to its true position as alleged by the Examiner.

Applicants respectfully conclude that claims 13-18 have been shown to be patentable over the references of record, Steer, Maeda et al and Ishikawa et al; Steer directed to a land-based cellular phone system using location information for interference protection regarding safety issues, Maeda et al directed to a satellite control method and satellite communication system, and Ishikawa et al directed to a method for determining position of mobile earth station in satellite communication systems do not compositely

teach, suggest or imply the teachings as set out in claims 13-18 or the remaining claims of the application, nor would one of ordinary skill in the art be induced to combine them in the manner suggested by the Examiner, aside from Applicants' own disclosure, there being no motivation to do so.

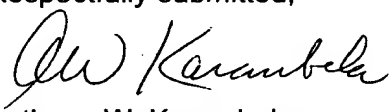
Applicants gratefully acknowledge the allowability of claim 26.

Applicants have amended claim 1 in order to particularly point out and distinctly claim the invention with regard to the newly applied Steer reference directed to applying location techniques to protect against the use of land-based cellular phones in prohibited areas wherein operation of same could cause damage such as in hospitals or airplanes, whereas Applicants are claiming a method for operating a mobile satellite communication system having at least one gateway and at least one user terminal and a constellation of satellites which is completely distinguishable thereover.

Applicants respectfully submit that in view of the above remarks and amendments, all of the claims presently under prosecution have been shown to be patentably distinguishable over the prior art and contain patentable subject matter over the references of records, Steer, Maeda et al, Ishikawa et al, Martti et al and Alperovich et al, alone or in combination.

Accordingly, Applicants respectfully request that this application be reviewed and reconsidered in view of the above remarks and amendments and that a Notice of Allowance be issued at an early date.

Respectfully submitted,



Anthony W. Karambelas
Registration No. 25,657

Karambelas & Associates
916 Silver Spur Road, Suite 306
Rolling Hills Estates, CA 90274
Telephone: (310) 265-9565
Facsimile: (310) 265-9545